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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,394	11/18/2003	Rodney Dean Miller	A5GN2102US	7446

23935 7590 01/08/2007
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EXAMINER

HA, DAC V

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/717,394

Applicant(s)

MILLER ET AL.

Examiner

Dac V. Ha

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2), of such treaty in the English language.

1. **Claims 1-8, 20** are rejected under 35 U.S.C. 102(e) as being anticipated by Pham (US 6,952,124).

Regarding claim 1, Pham discloses all claimed subject matter as follows:

“an oscillator network that generates said loop output signal with a frequency that varies in response to a control voltage and to a frequency-determining parameter” (Fig. 3; elements 340, 350; col. 3, line 1 to col. 4, line 19);

“a feedback loop that generates said control voltage in response to the phase difference between said reference signal and a loop feedback signal wherein said feedback loop includes a loop frequency divider that has a divisor N and generates said loop feedback signal in response to said loop output signal” (Fig. 3, element 300; col. 3, line 1 to col. 4, line 19; col. 1, lines 38-44);

“a controller that increments said frequency-determining parameter to maintain said control voltage within a predetermined control-voltage range” (col. 3, line 34 to col. 4, line 19; col. 5, line 19 to col. 7, line 25).

Regarding claim 7, see claim 1 above.

Regarding claim 2, Pham further discloses “wherein said controller is configured to monitor said control voltage and increment said frequency-determining parameter

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each time said control voltage reaches a limit of said control-voltage range" in col. 7, lines 1-15.

Regarding claim 8, see claim 2 above.

Regarding claim 5, Pham further discloses the claimed subject matter "wherein said controller includes comparator that compares said control voltage to said control-voltage range" in Fig. 3, element 352.

Regarding claim 6, Pham further discloses:

"a phase detector that generates an error signal in response to the phase difference between said reference signal and said loop feedback signal" (Fig. 3, element 310);

"a charge pump that provides drive currents in response to said error signal" (Fig. 3, element 320);

"a loop filter that generates said control voltage in response to said drive currents" (Fig. 3, element 330; Fig. 1, element 104; col. 1, lines 26-32; col. 3, lines 8-32).

Regarding claim 20, see claim 6 above.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. **Claims 9-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pham.

Regarding claim 9, Pham differs from the claimed invention in that it does not disclose "a plurality of inverters; and a plurality of switches that each couple a different number of said inverters in a ring in response to said controller; said frequency-determining parameter thereby formed by said inverters". However, Pham discloses a couple particular embodiments for constructing a VCO to accommodate its inventive concept in Fig. 9, 10, but it is not limited to those particular implementation. Therefore, a person of ordinary skill in the art would have easily realized that such claimed subject matter in claim 9 is application preference and specific and would have been obvious to one skilled in the art as optional.

Regarding claim 10-19, similar analogy to that of claim 9 above applied.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jaehne et al. (US 6,747,519) discloses Phase-Locked Loop With Automatic Frequency Tuning.

Baird et al. (US 7,133,485) discloses Feedback System Incorporating Slow Digital Switching For Glitch-Free State Changes.

Nelson et al. (US 6,552,618) discloses VCO Gain Self-Calibration For Low Voltage Phase Locked-Loop Applications.

McDonagh et al. (US 7,046,093) discloses Dynamic Phase-Locked Loop Circuits And Methods Of Operation Thereof.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-3086. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Dac V. Ha', with a horizontal line underneath.

Dac V. Ha
Primary Examiner
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